

REMARKS

In the outstanding Official Action, claims 1-8 were rejected under 35 U.S.C. §101, as allegedly lacking patentable utility. That rejection is respectfully traversed, for the following reasons.

That rejection is based entirely on the disclosure at page 6, lines 6-16 of the specification, as illustrated in Fig. 3, wherein application of a theoretical calculation gives rise to a transition temperature (T_c) for the claimed C_{20} fullerene polymers that "can be expected to be as large as 180 K."

However, the specification in several other instances reports more modest critical temperature values for the claimed C_{20} fullerene polymers: see, page 2, lines 22-23, "...a superconductor with a transition temperature of the level of 100 K can be realized"; page 5, lines 19-21, "...the chain substance made of the C_{20} Fullerene molecules exerts a superconductivity with a transition temperature in the order of 100 K"; and page 8, lines 15-16, "...a superconductor with a transition temperature of the level of 100 K can be realized."

Therefore, the specification asserts at least two utilities for the claimed subject matter, namely, (1) superconductivity at temperatures that "can be expected to be as large as 180 K"; and (2) superconductivity at "a transition temperature of the level of 100 K."

We note that the claims are appropriately not limited to any particular critical temperature, given that, as the Examiner is aware, the critical temperature of a superconductor may be substantially varied by factors such as the presence and nature of dopants, and the application of superatmospheric versus ambient pressures.

The Official Action considers the first asserted utility noted above to be incredible, although no evidence substantiating that view is provided by the Official Action. As such, it is believed that the §101 rejection is improper even as to the first asserted utility, given that substantiating evidence from the USPTO evidence is a necessary element of a sustainable §101 rejection. See, e.g., *In re Brana*, 51 F.3d 1560, 34 USPQ2d 1436 (Fed. Cir. 1995):

"Only after the PTO provides evidence showing that one of ordinary skill in the art would reasonably doubt the asserted utility does the burden shift to the applicant to provide rebuttal evidence sufficient to convince such a person of the invention's asserted utility." Citations omitted, 34 USPQ2d at 1441.

However, even if the first asserted utility were considered to be incredible, a point as to which Applicant does not concur, nevertheless, the presence of at least one additional and unchallenged utility that is specific, substantial, and credible, serves as a matter of law to render the §101 rejection improper. In this case, the assertion of superconductivity at transition temperatures of the level of 100 K constitutes such an

additional asserted utility that is specific, substantial and credible.

The Examiner rightly makes no challenge to the credibility of this additional asserted utility, given that superconductivity at 135 K in cuprate-based materials had been reported more than ten years ago (A. Schilling et al., *Nature*, **363**, 56 (1993)), and given that superconductivity at 117 K has been more recently reported for the fullerenes (Schön et al., "High-Temperature Superconductivity in Lattice-Expanded C60", *Science* **293**, 2432-2434 (2001)).

As noted in MPEP §2107.02, "...an applicant need only make one credible assertion of specific utility for the claimed invention to satisfy 35 USC 101 and 35 USC 112; additional statements of utility, even if not "credible," do not render the claimed invention lacking in utility."

Moreover, the fact that the possibility of a transition temperature as high as 180 K is mentioned only in the specification, but is nowhere recited as a limitation in the claims, independently renders the utility rejection improper. See MPEP §2107.02 and the cases discussed therein: "statements made by the applicant in the specification or incident to prosecution of the application before the Office cannot, standing alone, be the basis for a lack of utility rejection under 35 USC 101 or 35 USC 112."

From the above discussion, therefore, it is believed to be apparent that the rejection of claims 1-8 under 35 USC §101 should be withdrawn, and such action is respectfully requested.

Claims 1-8 were also rejected under the first paragraph of 35 USC 112, as allegedly being based on a non-enabling disclosure. That rejection is also respectfully traversed, for the following reasons.

As the utility rejection is believed to have been overcome for the reasons discussed above, it is believed that the non-enablement rejection must likewise be withdrawn. As noted in MPEP §2107.02, "[a] 35 USC 112, first paragraph, rejection should not be imposed or maintained unless an appropriate basis exists for imposing a rejection under 35 USC 101."

We note that the non-enablement rejection also seeks to frame the issue in terms of the *Wands* factors, and in that context asserts that the claims encompass inoperative species in view of the disbelief expressed in the Official Action that the claimed materials could have a transition material as high as 180 K or above.

Applicant notes, however, that the claims are directed to "[a] superconducting material..." comprising the recited C₂₀ fullerene polymeric structure. Therefore, the preamble of the claims already serves to exclude materials that are not superconducting. If a transition temperature of 180 K or higher is ultimately never attained for the claimed polymers, then by

definition such non-superconducting materials would not be within the scope of the claims. Conversely, the claims appropriately cover species of the invention for which superconductivity is achieved, regardless of the critical temperature.

In view of the foregoing Remarks, therefore, it is respectfully submitted that this application has been placed in condition for allowance. Allowance and passage to issue on that basis are accordingly respectfully requested.

Respectfully submitted,

YOUNG & THOMPSON

Thomas W. Perkins
THOMAS W. PERKINS 33027
for Andrew J. Patch, Reg. No. 32,925
745 South 23rd Street
Arlington, VA 22202
Telephone (703) 521-2297
Telefax (703) 685-0573